Tetra Tech EM Inc.

6801 Engle Road, Suite G ◆ Middleburg Heights, Ohio 44130 ◆ (440) 234-0886 ◆ FAX (440) 234-1725

20 Dec 01

Mr. Joe Fredle
On-Scene Coordinator
Emergency Response Branch
U.S. Environmental Protection Agency Region 5
25089 Center Ridge Road
Westlake, OH 44145

Subject: **Letter Report**
Cleveland Hopkins International Airport Site
Cleveland, Cuyahoga County, Ohio
Technical Direction Document No. S05-0101-007
Tetra Tech Contract No. 68-W-00-129

Dear Mr. Fredle:

The Tetra Tech EM Inc. Superfund Technical Assessment and Response Team (START) has prepared this letter report in accordance with the requirements of Technical Direction Document (TDD) No. S05-0107-007, which the U.S. Environmental Protection Agency (U.S. EPA) assigned to START. The scope of this TDD includes photographic documentation of site activities, slag leachate field sampling, laboratory analyses of samples, validation of water sample analytical data, and preparation of a letter report. Enclosure 1 of this letter report provides site figures, Enclosure 2 provides a photographic log, and Enclosure 3 provides the validated analytical results.

The Cleveland Hopkins International Airport site is located in Cleveland, Ohio (see Figure 1 in Enclosure 1). The site is in a primarily industrial and commercial area and is bounded by State Route 237 and railroad tracks to the east, the NASA John H. Glenn Research Center and Aerospace Parkway to the west, Brook Park Road to the north, and Aerospace Parkway and the IX Center to the south. The airport is owned by the City of Cleveland and is currently expanding through the construction of a new runway. The runway construction involved the placement of approximately 100,000 cubic yards of slag as a sub-base. The slag is a by-product of the steel-making process and was obtained from a local steel manufacturing facility.

Shallow groundwater at the site may have contacted the slag and possibly leached into the two nearby surface water bodies: Abrams Creek and the Rocky River. Pools of "slag leachate" near the excavation were observed to be white and odorous. City of Cleveland officials therefore ordered the slag to be removed and replaced with limestone. As part of the removal activities prior to 31 Oct 01, a contractor was observed by airport officials pumping slag leachate that had accumulated in a slag excavation area into a drainage area. The drainage area contained a pipe connected to a catch basin that discharges to an outfall (outfall 004), which in turn discharges to Abrams Creek. Airport officials indicated that although the pipe is not currently connected to the catch basin, slag leachate from the end of the pipe was seeping into the catch basin and discharging to outfall 004.

The contractor was also observed pumping the slag leachate to the ground surface, where it was observed flowing across the proposed runway/taxiway. Photographs of these conditions were provided by Mark Villan, Airport Chief Engineer (see Enclosure 2). These conditions had ceased before START arrived on site to document conditions. According to Mark Villan, the slag leachate should have been pumped to a tanker truck and either treated or disposed of off site.

On 31 Oct 01, U.S. EPA On-Scene Coordinator (OSC) Joe Fredle and START member Bill Kosco met at the airport to document conditions in the excavation area and collect a sample of the accumulated slag leachate that seeped into the ditch. The slag leachate sample was collected at the discharge point to the basin. OSC Fredle indicated that outfall 004 was visually checked prior to START's arrival at the site and that the discharge water appeared to be clear. The sample was packed with ice and shipped to EIS Analytical Services, Inc., South Bend, Indiana, to be analyzed for Resource Conservation and Recovery Act (RCRA) total metals, chemical oxygen demand (COD), ethylene glycol, propylene glycol, ammonia, sulfate, sulfide, sulfite, and total dissolved solids (TDS). Table 2 summarizes analytical results. The sample was screened at the site for temperature, pH, conductivity, turbidity, dissolved oxygen (DO), ammonia, hydrogen sulfide, salinity, and sulfite. Hach kit analyses were also performed for ammonia, sulfide, and sulfate. Table 1 summarizes the results. Validated analytical results are provided in Enclosure 3.

Tetra Tech does not anticipate any further activities under this TDD. If you have any questions or comments about the report or need additional copies, please contact me at (440) 234-0886.

Sincerely,

Bill Kosco
Project Manager

Enclosures (3)

cc: Lorraine Kosik, START Program Officer (letter only)
Thomas Kouris, START Program Manager (letter only)

TABLE 1

FIELD SCREENING RESULTS

Screening Parameter	Result
Temperature	15.0 degrees Celcius
pH	9.39 standard units
Conductivity	3.95 micro siemens per centimeter
Turbidity	470 National Turbidity Units
DO	0.81 milligram per liter (mg/L)
Salinity	0.19 percent
Ammonia	Not detected
Hydrogen Sulfide - Hach Kit	0.30 mg/L
Sulfite - Hach Kit	>32 mg/L
Sulfate - Hach Kit	1,425 mg/L
Sulfide - Hach Kit	0.213 mg/L
Ammonia - Hach Kit	1.40 mg/L

TABLE 2

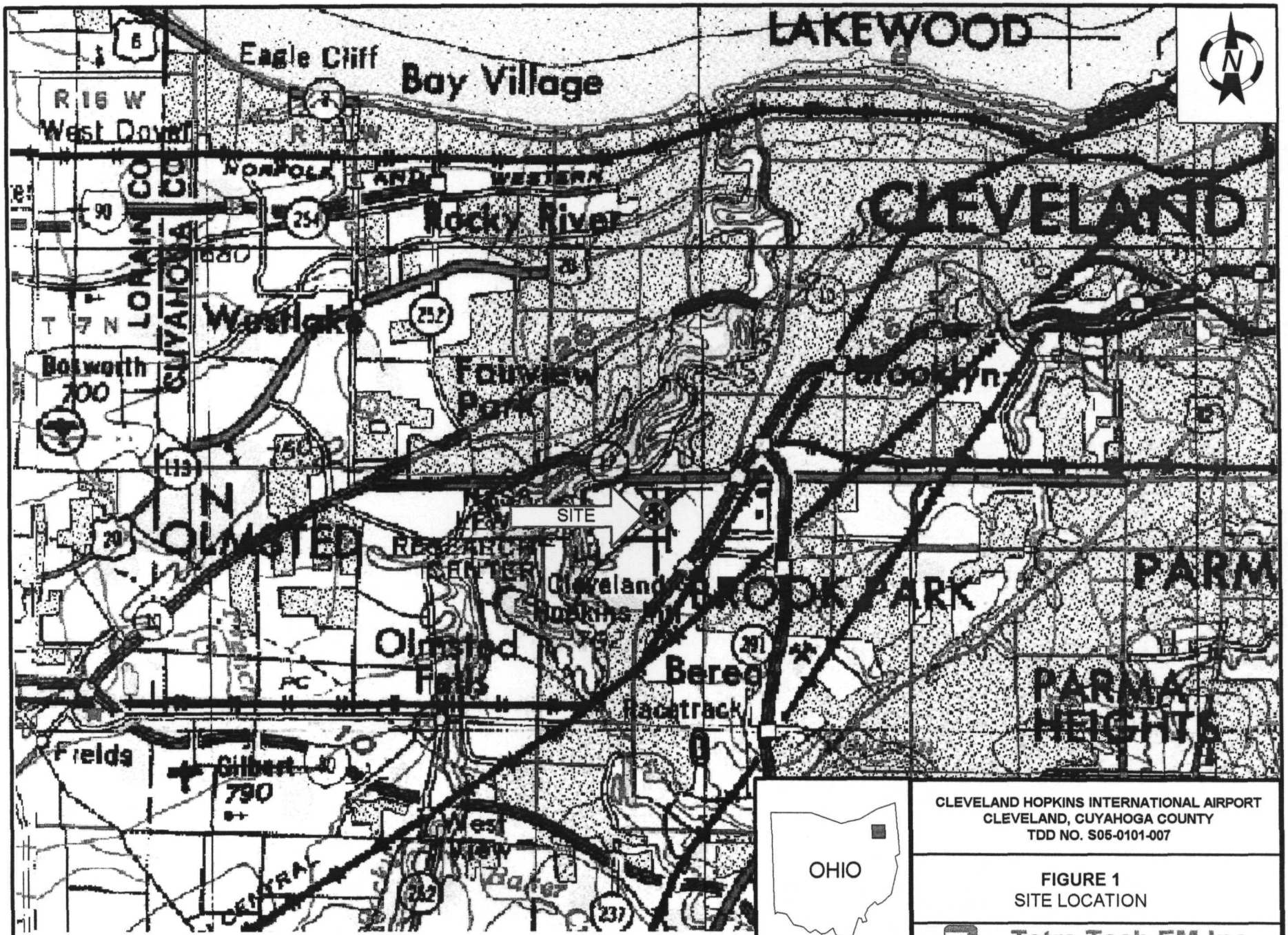
SUMMARY OF ANALYTICAL RESULTS

Analyte	Result (mg/L)
Aluminum	22.4
Antimony	<0.05
Arsenic	<0.05
Barium	0.29
Beryllium	<0.005
Cadmium	<0.02
Calcium	811
Chromium	<0.02
Cobalt	0.02
Copper	0.09
Iron	55.0
Lead	<0.05
Magnesium	67.1
Manganese	1.49
Mercury	0.00026
Nickel	0.05
Potassium	370
Selenium	<0.05
Silver	<0.005
Sodium	128
Thallium	<0.05
Vanadium	0.04
Zinc	0.32
COD	290
Ethylene Glycol	<5
Propylene Glycol	<5
Nitrogen (Ammonia)	<0.12
Sulfate	2,220
Sulfide (total)	1.5
Sulfite	110
TDS	3,870

ENCLOSURE 1

SITE FIGURE

(One Page)



SOURCE: Modified from U.S. Geological Survey, Cleveland Quadrangle, Ohio; 1972. SCALE :100,000

ENCLOSURE 2

PHOTOGRAPHIC LOG

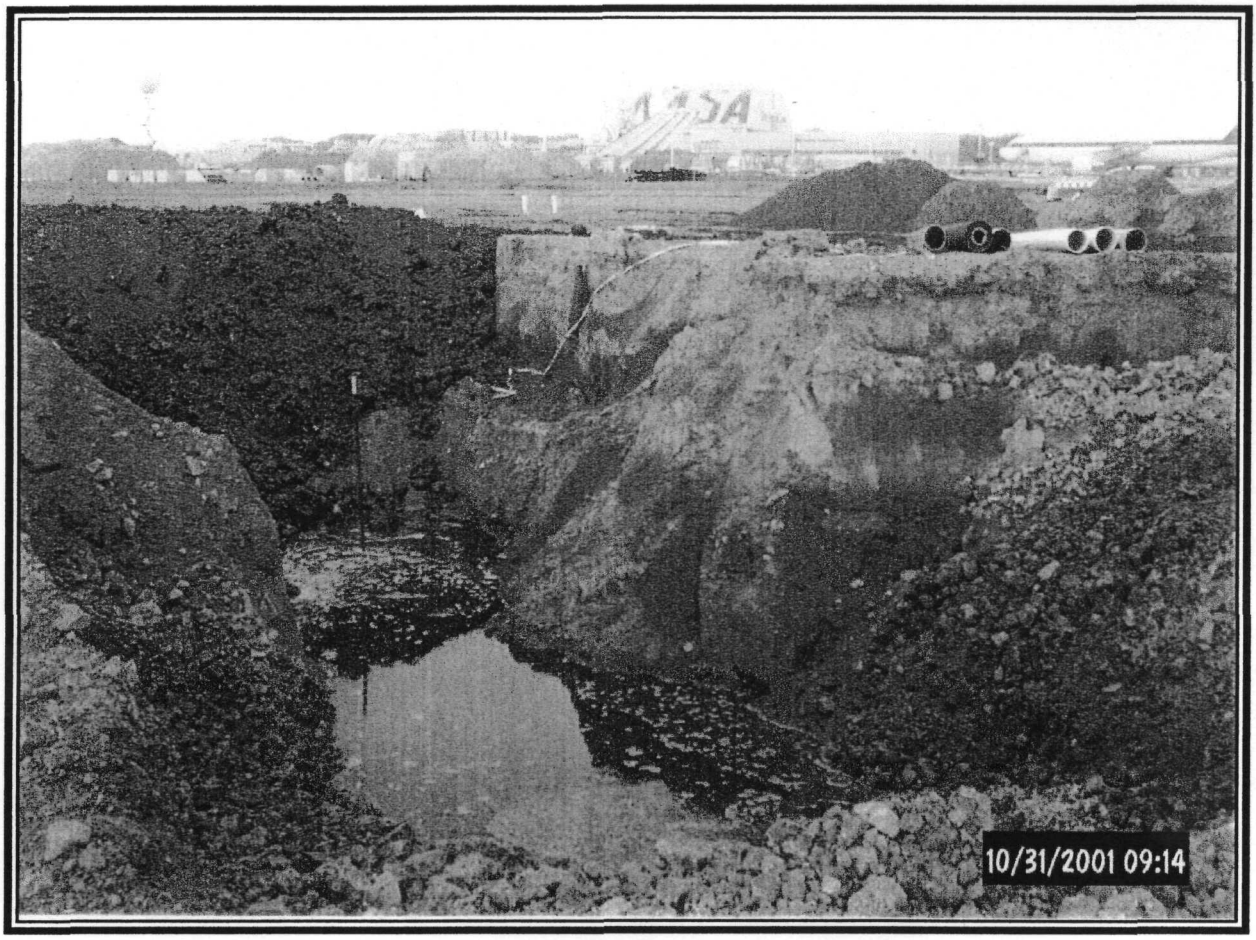
(Seven pages)

OFFICIAL PHOTOGRAPH NO. 1
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Slag leachate in excavation area; note white discoloration		
Location:	Cleveland Hopkins International Airport Cleveland, Cuyahoga County, Ohio		
Orientation:	Not applicable		
TDD No.:	S05-0101-007	**Date:**	10 Oct 01
Photographer:	Airport Official		

OFFICIAL PHOTOGRAPH NO. 2
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Slag leachate in excavation area; note green discoloration		
Location:	Cleveland Hopkins International Airport Cleveland, Cuyahoga County, Ohio		
Orientation:	Not applicable		
TDD No.:	S05-0101-007	**Date:**	19 Oct 01
Photographer:	Airport Official		



OFFICIAL PHOTOGRAPH NO. 3
U.S. ENVIRONMENTAL PROTECTION AGENCY

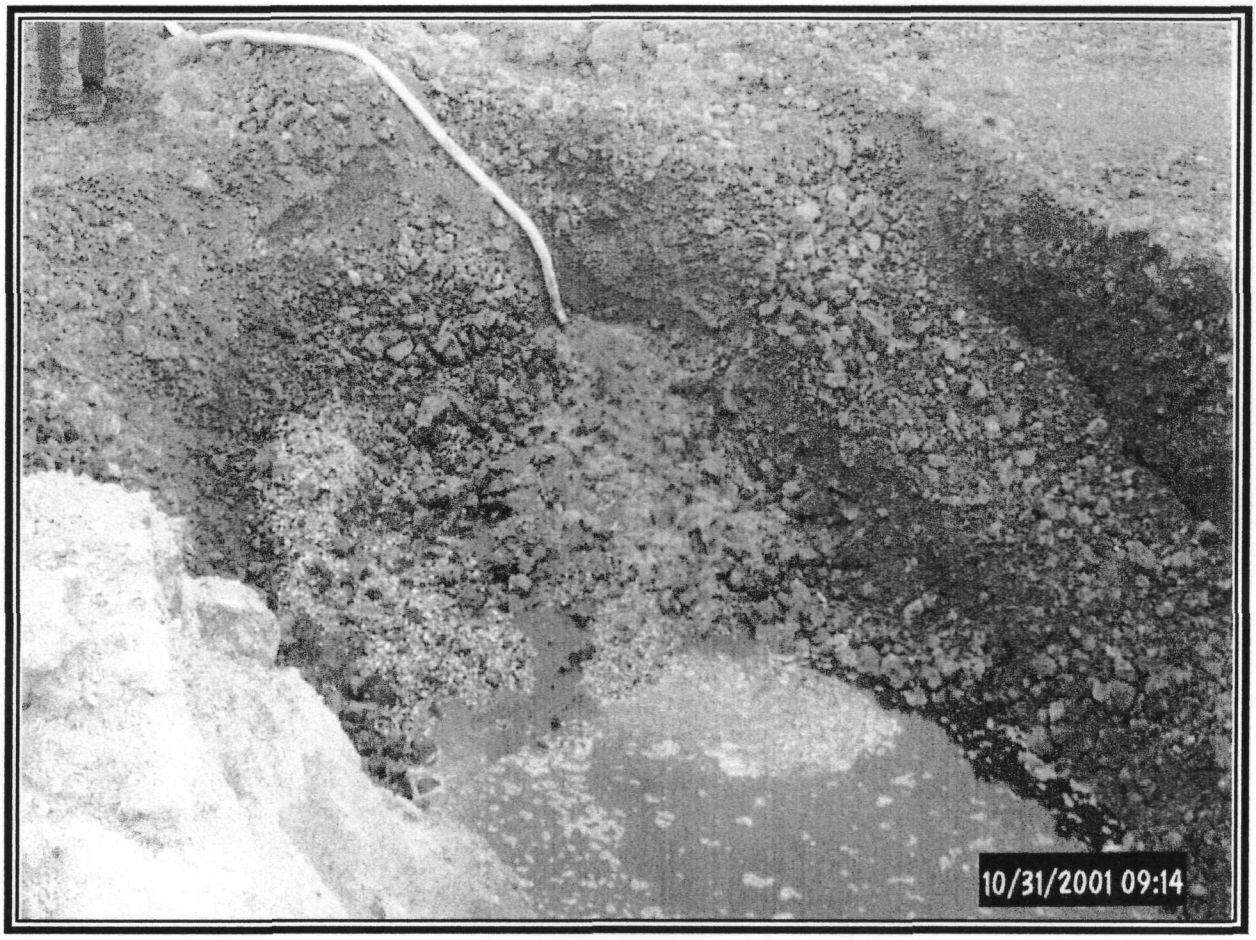
Subject: Slag leachate in excavation area; note black discoloration

Location: Cleveland Hopkins International Airport
Cleveland, Cuyahoga, County, Ohio

Orientation: Not applicable

TDD No.: S05-0101-007 **Date:** 31 Oct 01

Photographer: Airport Official



OFFICIAL PHOTOGRAPH NO. 4
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Slag leachate in excavation area; note sump hose discharging water and black discoloration		
Location:	Cleveland Hopkins International Airport Cleveland, Cuyahoga County, Ohio		
Orientation:	Not applicable		
TDD No.:	S05-0101-007	**Date:**	31 Oct 01
Photographer:	Airport Official		

OFFICIAL PHOTOGRAPH NO. 5
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Slag leachate being discharged on runway and taxiway from excavation area		
Location:	Cleveland International Hopkins Cleveland, Cuyahoga County, Ohio		
Orientation:	Unknown		
TDD No.:	S05-0101-007	**Date:**	31 Oct 01
Photographer:	Airport Official		

OFFICIAL PHOTOGRAPH NO. 6
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject: Airport official sampling slag leachate from sump discharge hose

Location: Cleveland Hopkins International Airport
Cleveland, Cuyahoga County, Ohio

Orientation: Unknown

TDD No.: S05-0101-007 **Date:** 31 Oct 01

Photographer: Airport Official

OFFICIAL PHOTOGRAPH NO. 7
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject: Slag leachate contaminated water discharging into catch basin connected to outfall 004

Location: Cleveland Hopkins International Airport
Cleveland, Cuyahoga County, Ohio

Orientation: Not applicable

TDD No.: S05-0101-007 **Date:** 31 Oct 01

Photographer: Airport Official

ENCLOSURE 3

VALIDATED ANALYTICAL RESULTS

(Nine Sheets)

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
69499E0197	AIRPORT

SAMPLERS: *(Print Name and Sign)* Bill Kosco

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Analyte: Ethylene Glycol	Propylene Glycol	Ammonia	COD	Sulfate	Sulfide	Sulfite	Total Metals *	TDS
DP-01	10/31	1500		X	Discharge Point to Basin	6	X	X	X	X	X	X	X	X	X

Activity Code:

* 9 TOTAL PARAMETERS *

0101.014

TAG NUMBERS 79166

* INCLUDING CALCIUM, MAGNESIUM, MANGANESE, ALUMINUM

NOTE: VERBAL TAT 1-WEEK AFTER RECEIPT OF SAMPLE

QA LEVEL 2

PLEASE FAX VERBAL RESULTS TO: MS. LISA GRAZYK

TETRATECH EM INC.
200 EAST RANDOLPH
SUITE 4700
CHICAGO, IL 60601
PHONE: (312)856 5700
FAX: (312)978 0118

RUSH

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
William Kosco	10/31/01 1600	FED EX
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)* / Date / Time
FED EX	11.01.01 0930	

Ship To:

ATTN:

Airbill Number

Chain of Custody Seal Numbers

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

5-47926

[redacted]

Ms. Lisa Graczyk
Tetra Tech EM, Inc.
200 East Randolph Drive, Suite 4700
Chicago, IL 60601
Tel No: 312-856-8721
Fax No: 312-938-0118
PO No:
Project Name: Airport

Report Date:	11/9/01
EIS Order No:	011100014
EIS Sample No:	079166
EIS Project No:	3012-1005-01
Client Sample ID:	**DP-01**
Date Collected:	10/31/01
Date Received:	11/1/01
Collected By:	Bill Kosco

This report presents results of analysis for your sample(s) received under our Order No above. This Number is to be used in all inquiries concerning this report. The EIS Sample No above, as well as your Sample ID, refer to the first sample in a multi-sample submission

DEFINITIONS:

MDL = Method Detection Limit normally achieved in the absence of interferences or other matrix difficulties.
RDL = Reporting Detection Limit achieved in your sample. If numerically greater than the MDL, dilutions were required in order to perform the analysis. If numerically less than the MDL, alternate techniques were employed.
nd = Not Detected at the RDL value. If present, result is less than this value.
< = Not Detected at the numerical value shown. If present, result is less than this value.
( ) = Result is estimated due to matrix interferences.

CHAIN-OF-CUSTODY *is enclosed if received with your sample submission.*

DRINKING WATER CERTIFICATIONS: Chemistry = C-71-02 Bacteriology = M-76-5

QUALITY ASSURANCE OFFICER

LABORATORY DIRECTOR

The data in this report has been reviewed and complies with EIS Quality Control unless specifically addressed above.

SAMPLE RESULTS

CLIENT SAMPLE ID: DP-01
CLIENT PROJECT: Airport
SAMPLE TYPE: Water(Non DW)
Date Collected: 10/31/01

Report Date: 11/9/01
EIS Sample No: 079166
EIS Order No: 011100014
Date Received: 11/1/01

Parameter	Results	Units	RDL	MDL	Test Date	Analyst ID	Method
COD	290	mg/L	5	5	11/5/01	E02	5220 D
Ethylene Glycol	<5	mg/L	5	10	11/5/01	E16	8015
Nitrogen(Ammonia)	<0.12	mg/L	0.12	0.05	11/2/01	E03	350.1
Propylene Glycol	<5	mg/L	5	10	11/5/01	E16	8015
Solids,Total Dissolved	3870	mg/L	4	2	11/5/01	E21	2540 C
Sulfate	2220	mg/L	250	5	11/6/01	E03	4500-SO4 E
Sulfide,Total	1.5	mg/L	0.1	0.1	11/5/01	E03	4500-S D
Sulfite	110	mg/L	20	2	11/6/01	E03	4500-SO3 B

SAMPLE RESULTS

CLIENT SAMPLE ID: DP-01
CLIENT PROJECT: Airport
SAMPLE TYPE: Water(Non DW)
Date Collected: 10/31/01

Report Date: 11/9/01
EIS Sample No: 079166
EIS Order No: 011100014
Date Received: 11/1/01

Parameter	Results	Units	RDL	MDL	Test Date	Analyst ID	Method
METALS							
Aluminum,Total	22.4	mg/L	5	0.05	11/5/01	E09	200.7
Antimony,Total	<0.05	mg/L	0.05	0.05	11/5/01	E09	200.7
Arsenic,Total	<0.05	mg/L	0.05	0.05	11/5/01	E09	200.7
Barium,Total	0.29	mg/L	0.01	0.01	11/5/01	E09	200.7
Beryllium,Total	<0.005	mg/L	0.005	0.005	11/5/01	E09	200.7
Cadmium,Total	<0.02	mg/L	0.02	0.02	11/5/01	E09	200.7
Calcium,Total	811	mg/L	2	0.02	11/5/01	E09	200.7
Chromium,Total	<0.02	mg/L	0.02	0.02	11/5/01	E09	200.7
Cobalt,Total	0.02	mg/L	0.01	0.01	11/5/01	E09	200.7
Copper,Total	0.09	mg/L	0.01	0.01	11/5/01	E09	200.7
Iron,Total	55.0	mg/L	2	0.02	11/5/01	E09	200.7
Lead,Total	<0.05	mg/L	0.05	0.05	11/5/01	E09	200.7
Magnesium,Total	67.1	mg/L	2	0.02	11/5/01	E09	200.7
Manganese,Total	1.49	mg/L	0.005	0.005	11/5/01	E09	200.7
Mercury,Total	0.00026	mg/L	0.0002	0.0001	11/5/01	E09	245.1
Nickel,Total	0.05	mg/L	0.04	0.04	11/5/01	E09	200.7
Potassium,Total	370	mg/L	10	0.05	11/6/01	E09	258.1
Selenium,Total	<0.05	mg/L	0.05	0.05	11/5/01	E09	200.7
Silver,Total	<0.005	mg/L	0.005	0.005	11/5/01	E09	200.7
Sodium,Total	128	mg/L	10	0.1	11/5/01	E09	200.7
Thallium,Total	<0.05	mg/L	0.05	0.05	11/5/01	E09	200.7
Vanadium,Total	0.04	mg/L	0.01	0.01	11/5/01	E09	200.7
Zinc,Total	0.32	mg/L	0.01	0.01	11/5/01	E09	200.7